CRITICAL SUCCESS FACTORS

PROTECT WORKER SAFETY AND HEALTH

We will protect the safety and health of Hanford workers.

The focus of this section is to document trends in accidents and radiological exposure. Improvements in these rates are due to the efforts of the Hanford workforce as they implement the Integrated ES&H Management System (ISMS), work towards achieving Voluntary Protection Program (VPP) "star" status, and accomplish work through Enhanced Work Planning (EWP). Safety and health statistical data is presented in this section, as well as the Facility Evaluation Board (FEB) scorecard.

SIGNIFICANT SAFETY AND HEALTH EVENTS

Safety Expo '99 Held — The 1999 Hanford Safety Exposition was held at the Trade Recreation Agriculture Center in Pasco Washington. This exposition included exhibits of Hanford projects and their safety commitments, and commercial safety vendors. Both the Hanford workforce and the general public are invited to this annual event. The live safety demonstrations, including the aftermath of a simulated drunk driving accident, are popular and receive public recognition. This event also documents and supports the path towards VPP recognition.

PHMC Safety Summit Planned — Fluor Daniel Hanford (FDH) is sponsoring a "safety summit" to be held May 25 and 26, 1999 to review the PHMC safety record and determine fresh means to reduce injuries. There has been a considerable growth in severity rate, and a lack of progress in further reducing the OSHA recordable case rate at the PHMC. This summit will bring together PHMC line managers, workers, and safety professionals to determine plans to improve the PHMC injury rates and reduce injuries and illnesses to the workforce.

Applied ALARA Workshop — FDH Radiation Protection will host a DOE complex-wide Applied ALARA Workshop conference May 24 through 26, 1999. This unique conference will include presentations to discuss lessons learned in the application of ALARA for radiological work at various facilities and demonstrations in the field of applied ALARA practices. This includes tours of the HAMMER Radiological Training Facility, ALARA Center of Technology, and work areas to observe ALARA applications in use. Topics of interest include dose and contamination control, waste minimization, mock-up training, protective clothing, specialized survey techniques, decontamination/decommissioning, work planning, conduct or ALARA programs, ALARA problems at Plutonium facilities, new technology. and fuel removal and storage.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

SIGNIFICANT SAFETY AND HEALTH EVENTS

Significant Increase in Severity Rate at PHMC — The PHMC Severity Rate has significantly increased since April 1998, largely on accumulation of days on open cases and reclassification of cases. These increases are seen at Spent Nuclear Fuels, Waste Management, and Facility Stabilization projects. Both graphs have had new average and control limits calculated reflecting these increases. The affected major subcontractors (MSCs) have reviewed their restricted workday cases and currently see progress towards full duty recovery on most Restricted cases. Options are being evaluated on cases that are "Fixed-and-Stable" or not progressing in recovery.

PHMC Project Review Statistics — Of the major Hanford projects, Facility Stabilization currently has the highest OSHA Recordable Case rate. BWHC (the subcontractor responsible for Facility Stabilization) has instituted reviews of recent injuries and is taking actions as a result. BWHC will status their action plan in 60 days to Fluor Daniel Hanford.

Bechtel Hanford Inc. (ERC) — The ERC reports approximately 575,231 hours since the last lost workday incident.

Reportable Skin and Personal Clothing Contaminations (meeting the DOE Reportable Criteria per DOE O 232.1A) — No personal contaminations were reported at PHMC Team facilities for this reporting period. April marks the seventh consecutive month the PHMC Team experienced reportable personnel contaminations below the baseline average, demonstrating a statistically significant improving trend. The improvement can be attributed to the continued efforts of the PHMC Team in radiological work planning and the effective use of lessons learned.

Collective Dose and Dose Estimate — For First Quarter CY 1999: there have been significant reductions in total person-rem since 1995. Preliminary differences in the BWHC actual dose versus estimate appear to be associated with the dose incurred as work continued on the repair of the 324 facility10-ton crane, plus the planned dose for material movement and thermal stabilization activities at the Plutonium Finishing Plant (PFP). LMHC/RPP fell short of their estimate. This reduction was the result of work rescheduling and program improvements gained in some evolutions, such as tank 241-C-106 sluicing. The Duke Engineering & Services, Inc./Spent Nuclear Fuel (DES/SNF) delta is the result of work not being performed per the SNF schedule, which formed the technical basis for the estimate. In total, the MSCs incurred 90% of the PHMC estimated dose. Procedure walkdowns and reviews of work processes with the focus on improving ALARA techniques and the additional use of engineered controls will be performed to reduce personnel exposure.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

Note 1: Control charts used in this report indicate whether program data is stable (i.e., within 3 standard deviations of the average) or unstable (i.e., outside 3 standard deviations of the average); and if a negative or positive trend exists. Stable program data does not mean a program is satisfactory. Statistically significant determinations use Deming Statistical Process Control criteria.

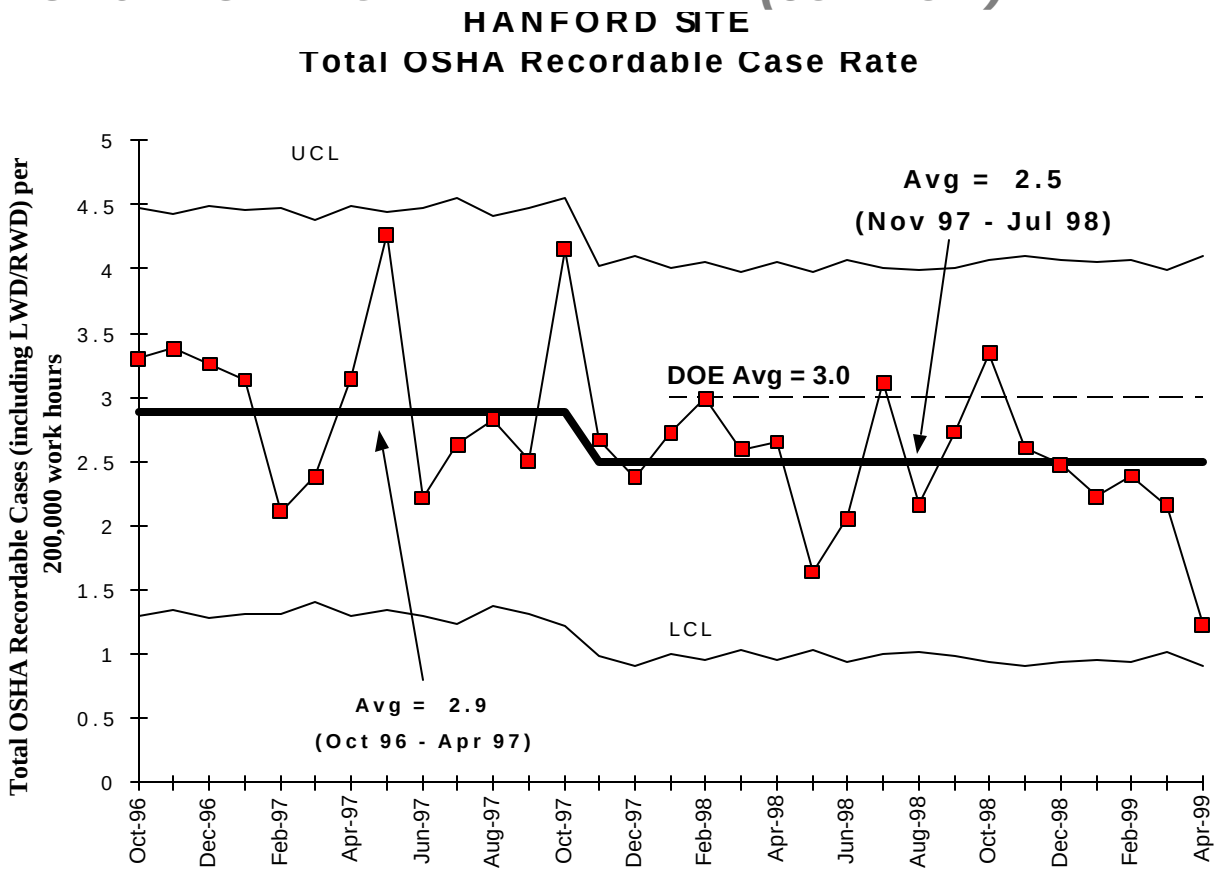
Note 2: The control charts submitted in this report fulfill the reporting requirements of Letter, J. D. Wagoner, RL, to President, FDH, "Contract No. DE-AC06-96RL13200 - Reporting of Safety Statistics to RL," dated November 4, 1996; Letter, S. A. Sieracki, RL, to J. F. Nemec, ERC, "Reporting of Safety Statistics to RL," CCN038876, dated October 21, 1996; and Letter, QSH-96-048, dated November 4, 1996, from John D. Wagoner, Manager, U.S. Department of Energy, Richland Operations Office to Dr. W. J. Madia, Director, Pacific Northwest National Laboratory, Subject: "Reporting of Safety Statistics to RL".

Note 3: The goal for each control chart contained in this section is to demonstrate statistically significant performance for the project or program being controlled as determined by Deming Statistical Process Control criteria. Improvement criteria includes single points below the Lower Control Limit (LCL) or seven consecutive points of better than average performance. Degradation criteria includes single points above the Upper Control Limit (UCL) or seven consecutive points of worse than average performance. Twenty-five points without significant improvement or degradation indicate stable or "flat" performance.

Note 4: All DOE average comparison data on the graphs are strictly from Department of Energy facilities. The data are retrieved from the Department of Energy Computerized Accident Incident Reporting Service (CAIRS) available on the Internet at http://tis.eh.doe.gov/cairs/stats.html-ssi. CAIRS is a database used to collect and analyze DOE and DOE contractor reports of injuries, illnesses, and other accidents that occur during DOE operations in accordance with DOE Order 231.1. The Office of Occupational Safety & Health Policy (EH-51) of the Department of Energy Headquarters manages the CAIRS system. The CAIRS data are subdivided into operations types, including “research” (used as the PNNL comparison) and “total construction” (used as the ERC comparison).

Note 5: Per OSHA requirements, previously reported data may change on a monthly basis due to such reasons as the replacement of estimates of days away and days restricted with actuals and case reclassifications applied retroactively to the date of the initial injury report.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)



Long Term Trends: Sitewide OSHA Recordable Case Rate has demonstrated a consistent pattern of significant improvements, starting in October 1996. There has been a 43% reduction in the Hanford OSHA Recordable Case Rate, comparing FY 1998 (2.6 cases per 200,000 hours) to FY 1995 and 1996 (4.6 cases per 200,000 hours). This trend is unchanged from the prior month's report.

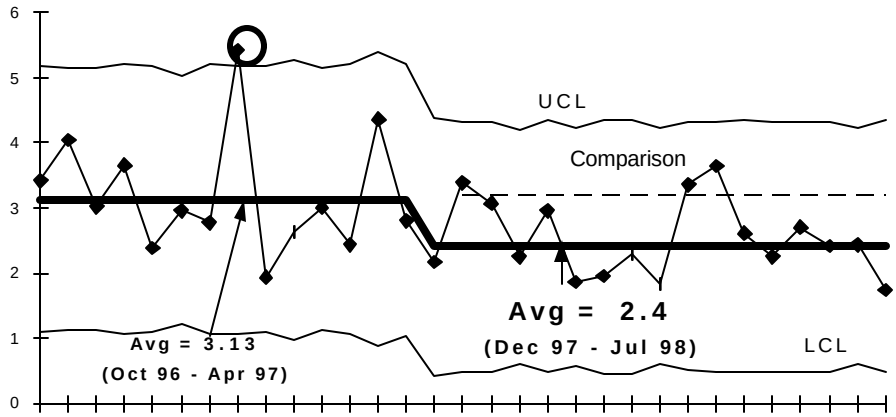
Current Trends: The sitewide data has been stable since October 1997. Although the data continues to be well below the DOE Complex Averages, actions to further reduce these rates are under evaluation.

DOE Complex Averages: DOE and Contractors CY 98 Rate = 3.0, Contractor = 3.2, Construction = 4.6, Research = 3.2. Current performance levels on all graphs are below these comparison rates.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

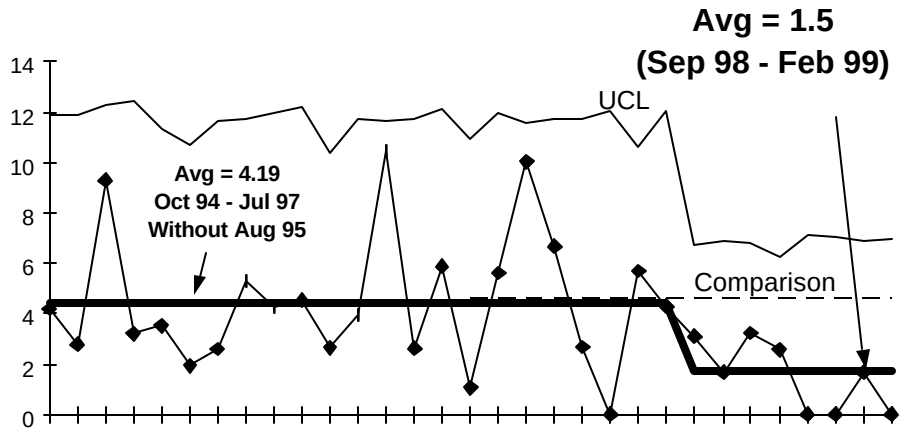
BY HANFORD CONTRACT

Total OSHA Recordable Case Rate



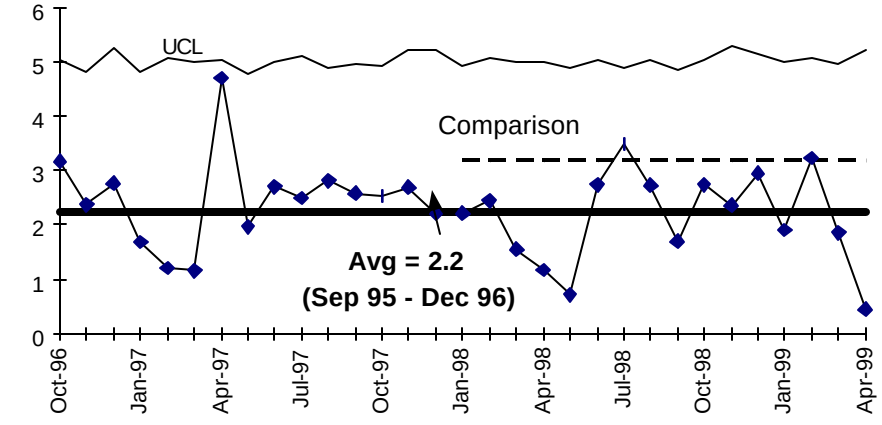
PHMC

FY 1998 = 2.7
FY 1999 to date = 2.5
Contractor Comparison Average =3.2
This indicator has been stable since December 1997. FDH is focusing on Health Physics Technicians and Nuclear Chemical Operators Strains and Sprains due to Body Motion Awkward Position to generate a reduction in injury rate.



ERC

12-Month Average
May 98 - Apr 99: 2.33
No. of Cases for Apr 99: 0
Case Rate for Apr 99: 0
Construction Comparison Average =4.6
The ERC has had a significant decrease, with seven months in a row below the previous baseline average of 4.2 cases per 200,000 hours. A new, reduced, baseline average has been established at 1.5 cases per 200,000 hours.

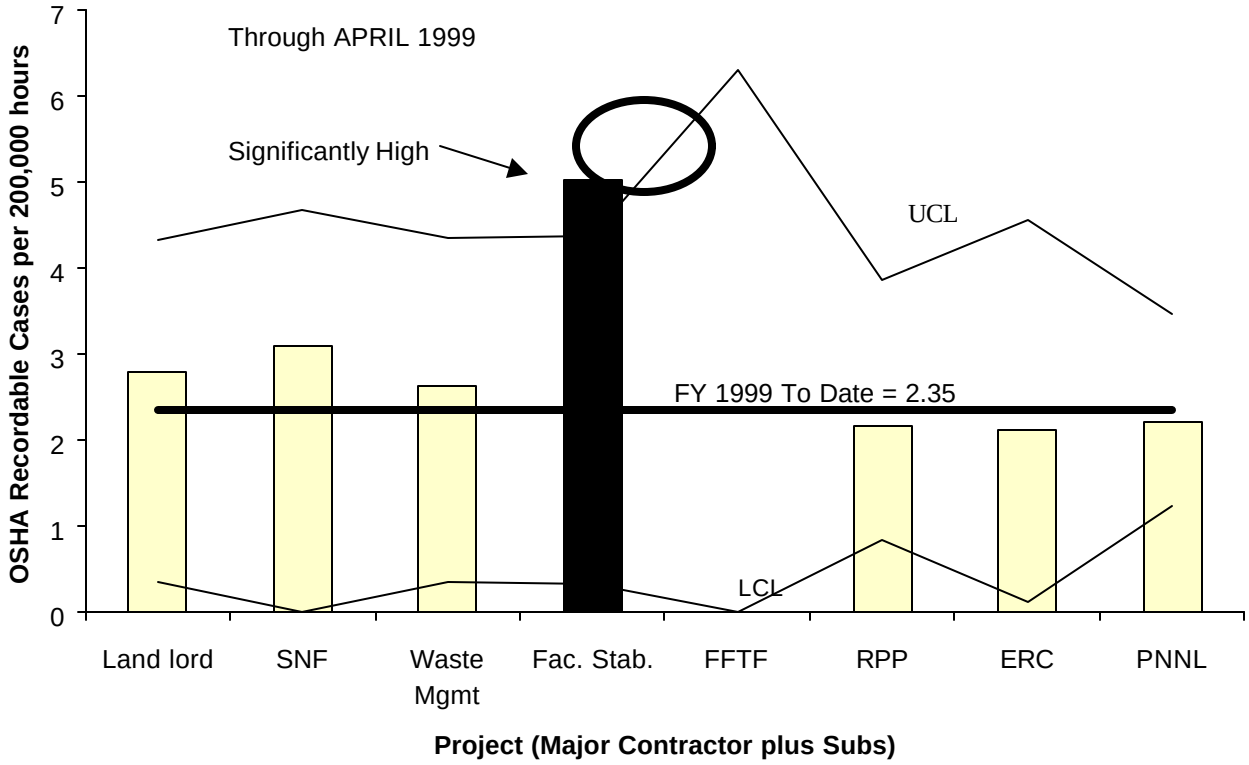


PNNL

Incidence Rate for CY97 = 2.35
Research Comparison Average = 3.2
This indicator has been stable since September 1995.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

ALL HANFORD PROJECTS
OSHA Recordable Cases By Project



The PHMC's Facility Stabilization (Fac. Stab.) project remains significantly above the site average. Much of this increase is seen at the Plutonium Finishing Plant facility. All Facility Stabilization occupational illness and injury rates for the past seven months have been elevated, although April was somewhat lower. Facility Stabilization workers and safety personnel are reviewing the illness and injury records and implementing actions intended to reduce these illness and injury rates. This will be an area of focus at the Safety Summit to be held by the PHMC in May 1999.

The ERC, and the PHMC's Waste Management and Landlord (DynCorp) have demonstrated significant reductions in their OSHA recordable case rates over the past year.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

PHMC PROJECTS

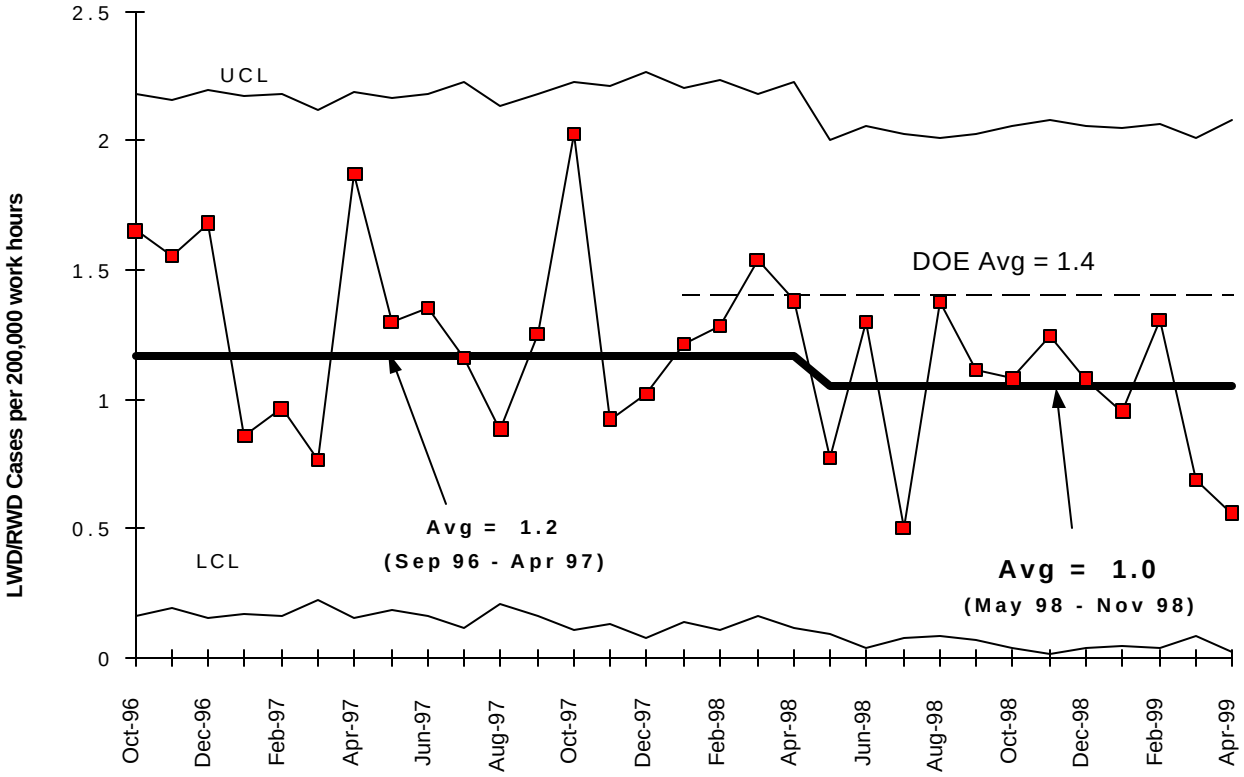
Occupational Illness & Injury Cases/Days

PBS PROJECT	CONTRACTOR	FYTD First Aid Cases	FYTD OSHA Recordable Cases, no Lost/ Restricted Time	FYTD OSHA Recordable Cases with Restricted Time, no Lost Time	FYTD OSHA Recordable Cases with Lost (away) Time	FYTD Restricted Work Days	FYTD Lost Work Days
River Protection Project	COGEMA	1	1			0	0
River Protection Project	DYN	1				0	0
River Protection Project	FDNW	2	2			0	0
River Protection Project	LMHC	62	9	7	1	66	112
Waste Management - DESH	DES	22	4	3	1	24	24
Waste Management - DESH	FDNW	16	2	1		3	0
Waste Management - DESH	FDNW/GA Grant	2				0	0
Waste Management - DESH	FDNW/MOWAT/ Power City Electric			1		48	0
Waste Management - WMH	FDNW	2				0	0
Waste Management - WMH	WMH	34	7	2	3	203	75
Transition Project	BWHC	47	10	10	5	279	39
Transition Project	DYN	60	6	5	4	104	43
Transition Project	FDNW	3				0	0
Transition Project	Global Technology Inc.		1			0	0
HAMMER	FDH	1	1			0	0
HAMMER	WMH		1			0	0
Mission Support	FDH		1			0	0
Mission Support	WMH	1	1			0	0
Distributed Support	BWP	11		1	1	17	52
Distributed Support	FDH	1	4			0	0
Distributed Support	FDNW		1			0	0
Distributed Support	LMSI	9	4	3		107	0
Distributed Support	NHC	2				0	0
Distributed Support	PTH	9	2			0	0

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

ALL HANFORD PROJECTS

OSHA Lost/Restricted Workday Case Rate



Long Term Trends: Sitewide Lost/Restricted Workday Case Rate has demonstrated a consistent pattern of significant improvements that started in October 1996. This early FY 1997 sitewide rate decrease was followed by another decrease in late FY 1998. There has been a 36% reduction in the Hanford Lost/Restricted Workday Case Rate when comparing FY 1998 (1.18 cases per 200,000 hours) to FY 1995 and 1996 data (1.85 cases per 200,000 hours). This percentage reduction is slightly less, and the new baseline average slightly higher than previous months' reports due to reclassification of cases, in accordance with OSHA reporting guidelines.

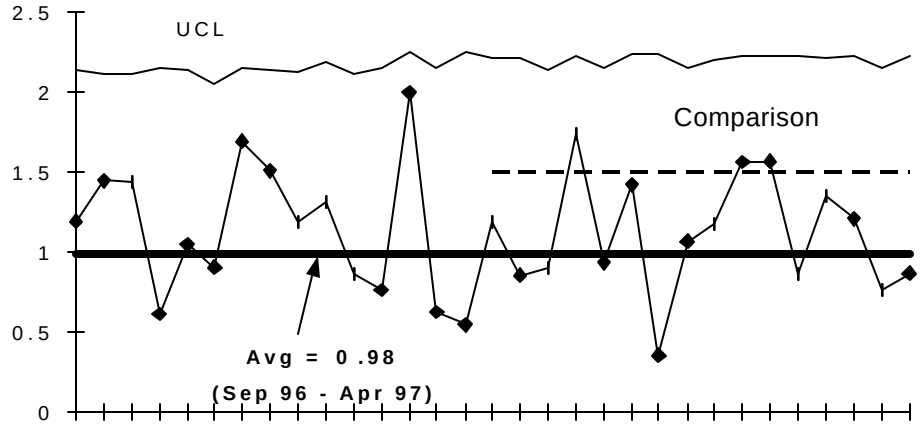
Current Trends: Sitewide Lost/ Restricted Workday case rate was significantly reduced in the second half of CY 1998. Current data validates this reduction.

DOE Comparison Averages: DOE and Contractors CY 98 Rate = 1.4, Contractor = 1.5, Construction = 2.5, Research = 1.3. All current rates are less than these comparison rates.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

BY HANFORD PROJECT

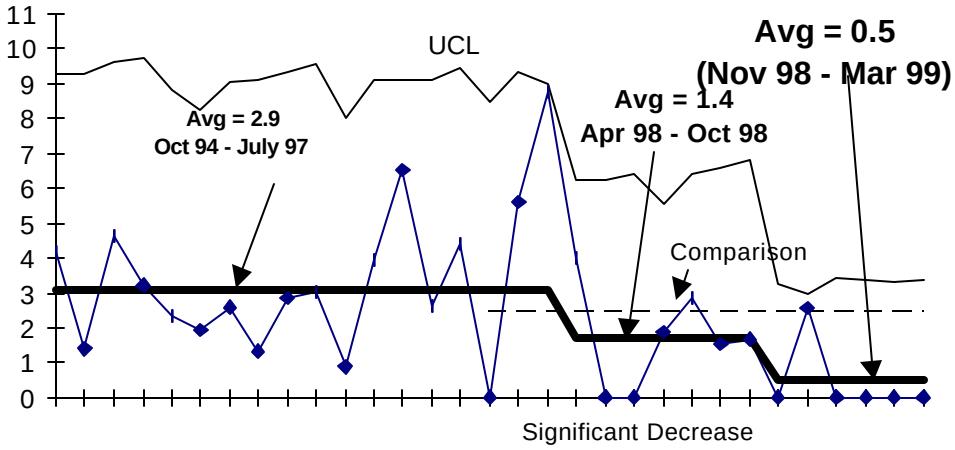
OSHA Lost/Restricted Workday Case Rate



PHMC

FY 1998 = 1.1
FY 1999 to date = 1.2
Contractor Comparison Average = 1.5

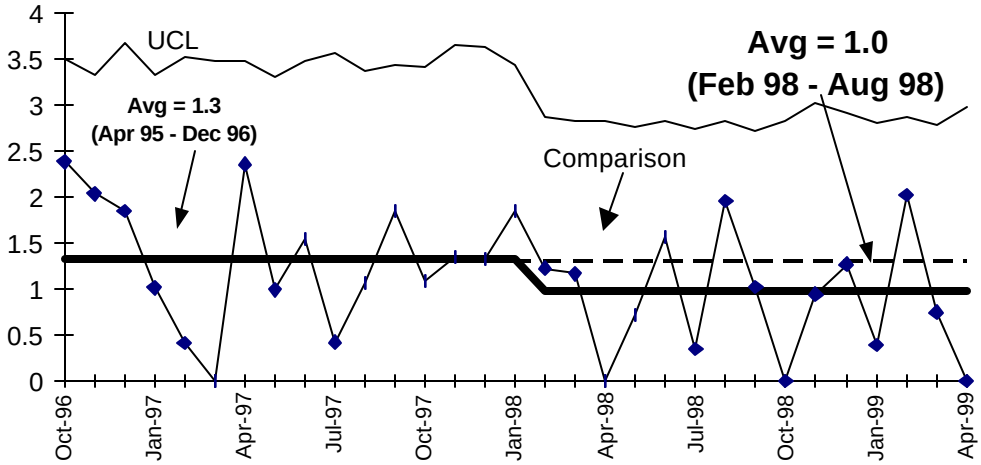
The data has been stable for the past two years. The PHMC plans a Safety Summit in May 1999 to examine methods to decrease this injury rate.



ERC

12-Month Average
May 98 - Apr 99: 0.98
No. of Cases for
Apr 99: 0
Case Rate for Apr 99: 0
Construction Comparison Average = 2.5

There has been a significant decrease over the past five months, with four of the months at one standard deviation below average.



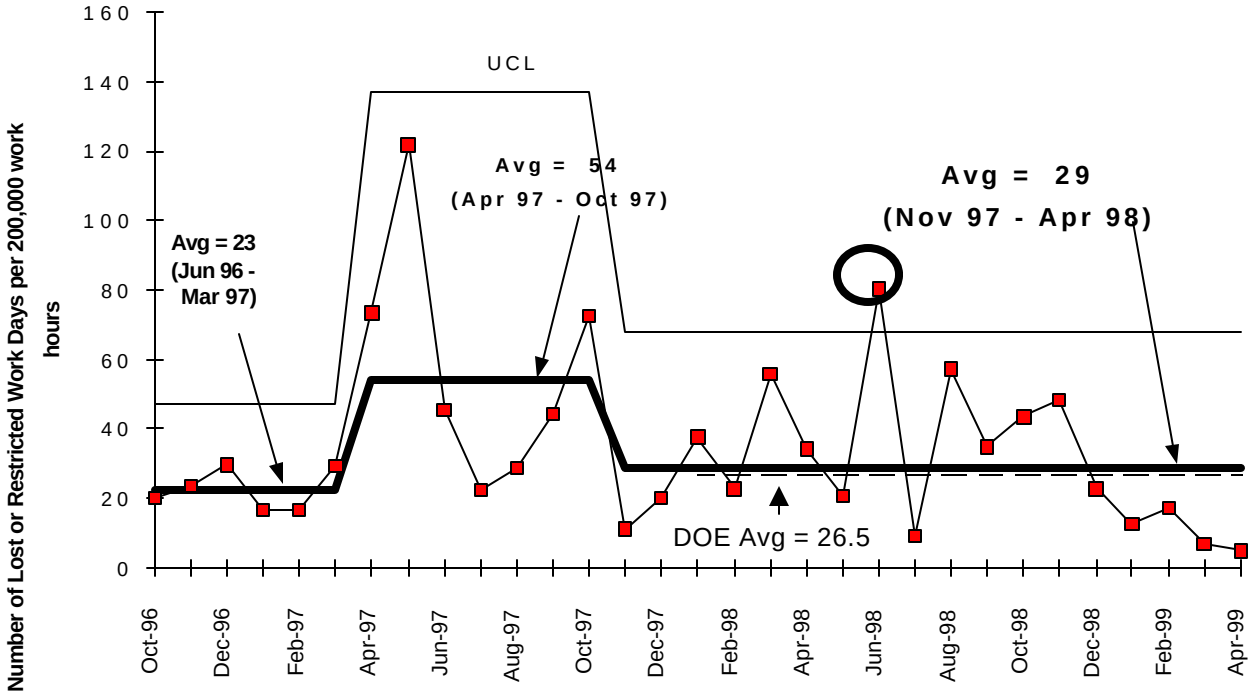
PNNL

Incidence Rate for CY97 = 1.05
Research Comparison Average = 1.3

The data have been stable since February 1998.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

ALL HANFORD PROJECTS
Lost/Restricted Workday Day Rate (Severity Rate)



Long Term Trends: Lost and Restricted Work Days decreased in late 1996 and early 1997, but significantly increased during the summer of 1997, and returned to a reduced rate in early 1998.

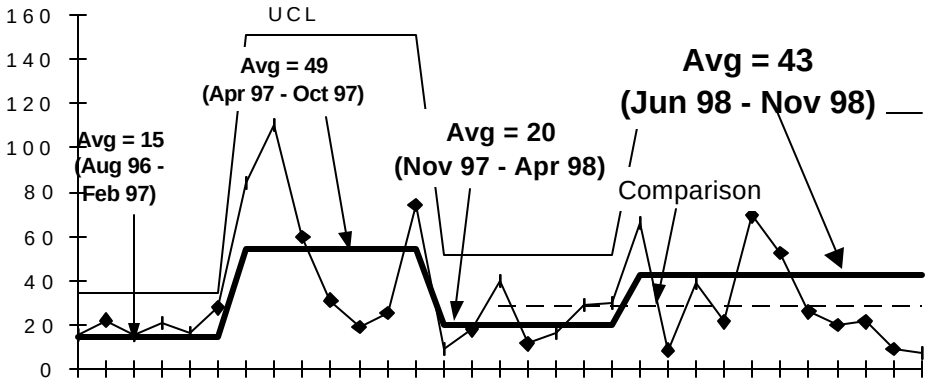
Current Trends: There has been a new increase noted for June 1998, due to further accumulation of lost and restricted days on open PHMC and PNNL cases.

DOE Comparison Averages: DOE and Contractors CY 98 Rate = 26.5, Contractor = 28.5, Construction = 56.8, Research = 23.8. Past cases accumulating additional days, and reductions in the DOE overall average from 1997 to 1998 have caused 1998 data to be greater than the comparison average.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

BY HANFORD PROJECT

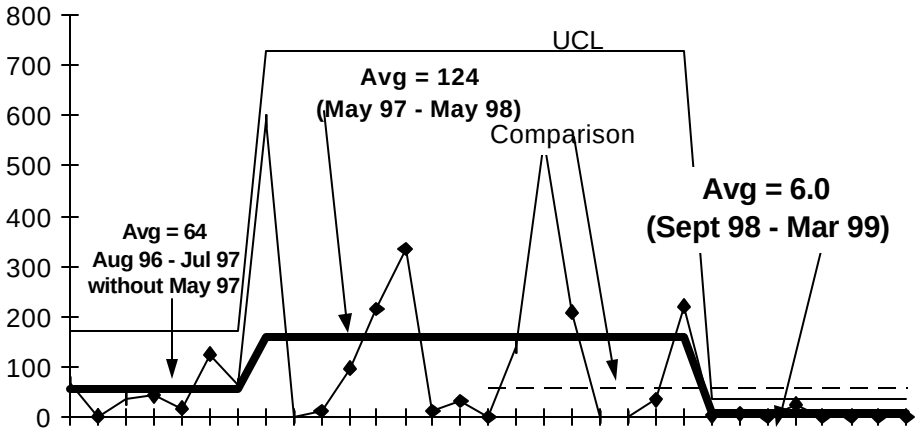
Lost/Restricted Workday Day Rate (Severity Rate)



PHMC

FY 1998 = 30
FY 1999 to date = 29
Contractor Comparison Average = 28.5

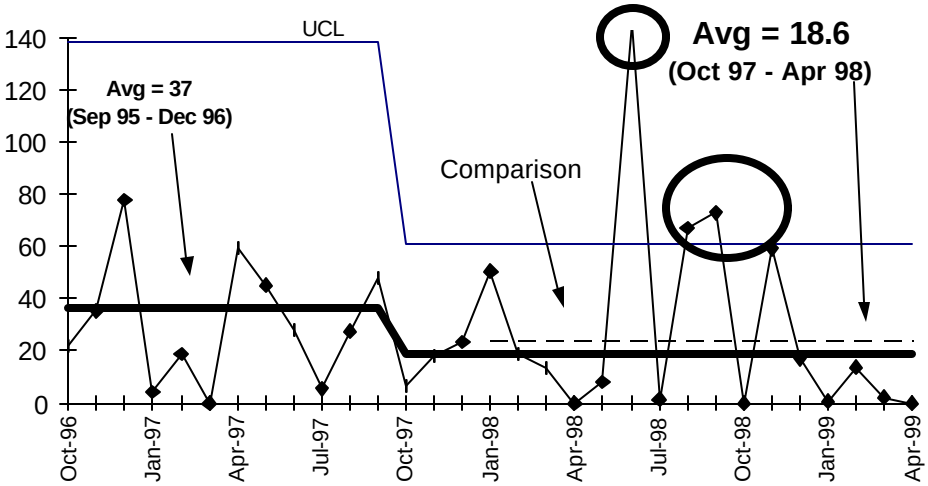
The PHMC has had a significant increase in their June 1998 through October 1998 data, largely on cases that are still open and accumulating days.



ERC

12-Month Average
May 98 - Apr 99: 26.51
Lost /Restricted Work Days for Apr 99: 0
Severity rate for Apr 99: 0
Construction Comparison = 57

ERC experienced a growth in May 1998 data. This caused a rebaselining of their chart. However, only one case remains open and continues to accumulating days.



PNNL

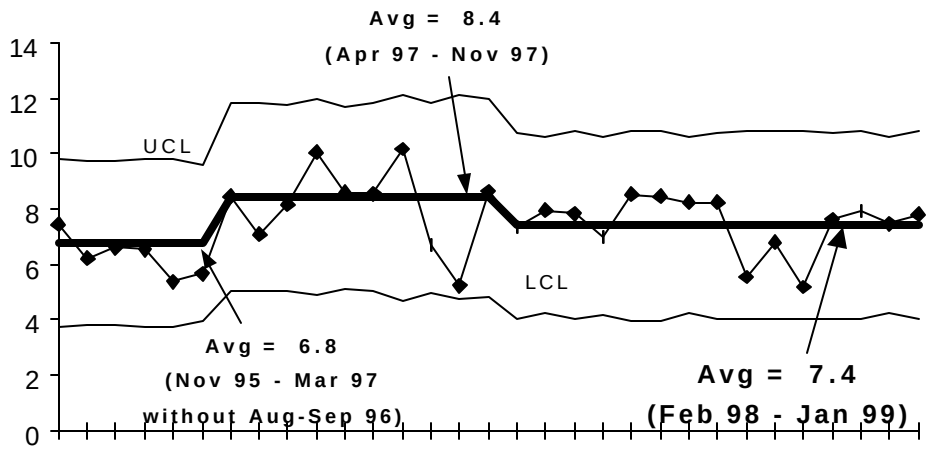
Incidence Rate for CY97 = 23.35
Research Comparison Average = 23.8

PNNL had spikes in the severity rate in June, Aug, Sep, and Nov 1998.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

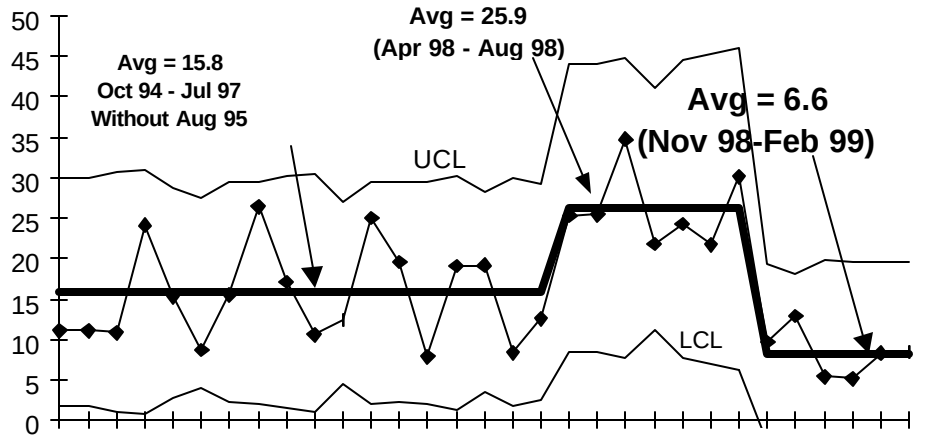
BY HANFORD PROJECT

First Aid Case Rate



P H M C

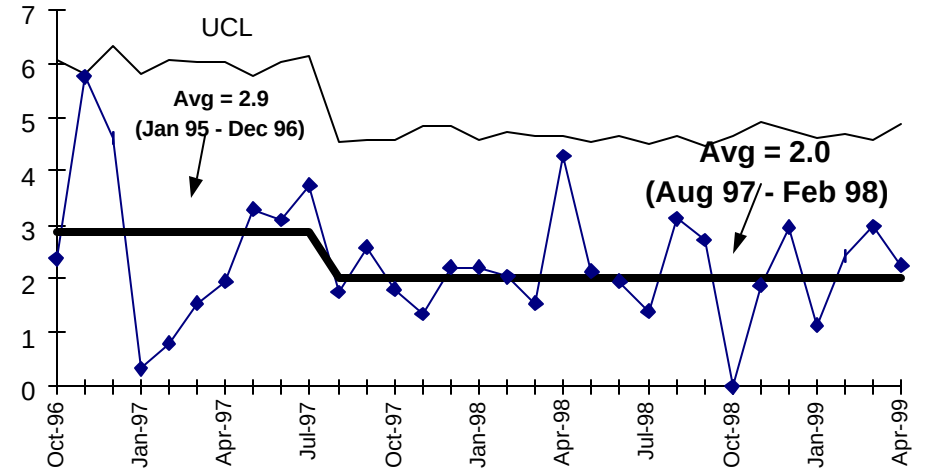
First Aid Rate undergoes seasonal cycles. Increases occur in warmer weather due to insect and animal encounters, and due to wind related minor injuries. Such cycles are not evident in the recordable injury indicators.



ERC

12-Month Average
May 98 - Apr 99: 18.04
No. of Cases Apr 99: 5
Rate for Apr 99: 8.46

The recent decrease in First Aid Rate more than recovered from the 1998 increase.



P N N L

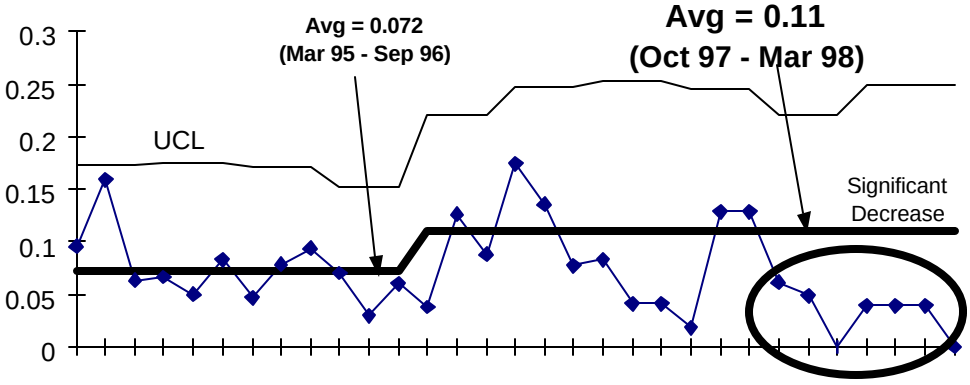
Incidence Rate for CY97 = 2.07

First Aid Rate has remained stable since August 1997.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

PHMC Team

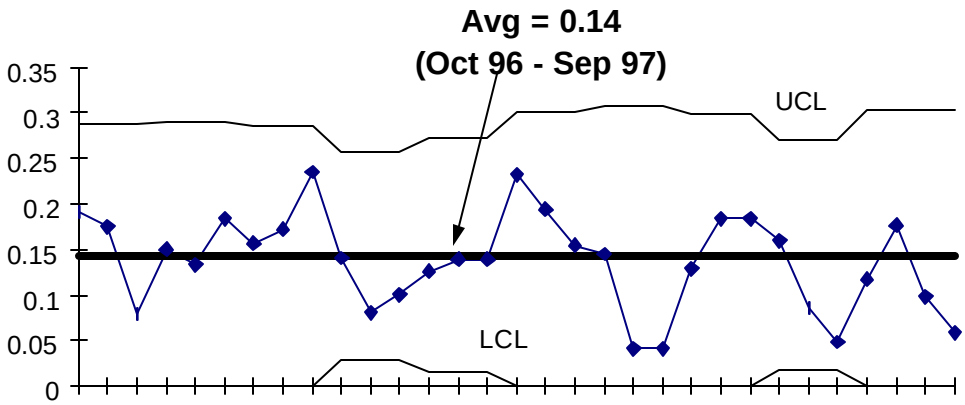
Radiological Events



PHMC Personnel Contaminations

(Number of Skin and Personal Clothing Contaminations per 10 Workers with > 0 Exposure during the quarter)

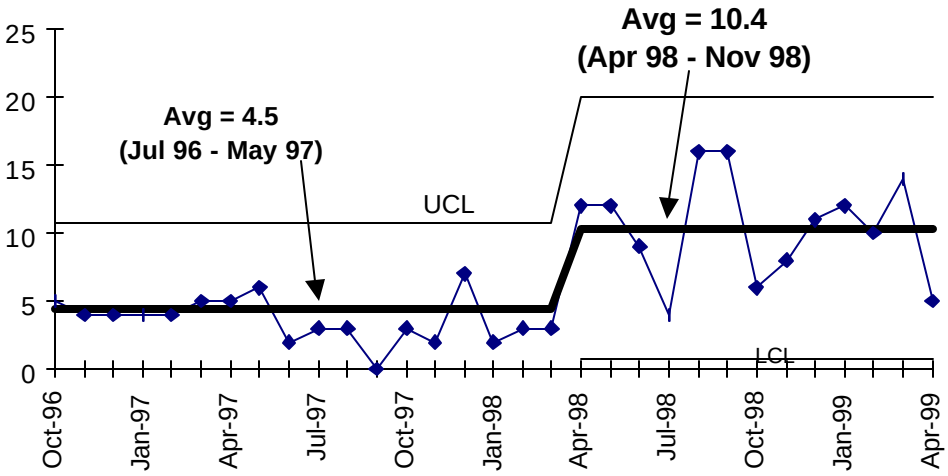
There has been a significant decrease in the past seven months.



PHMC Radiological Occurrences

(No. of Radiological Related Occurrences [without Biological or Legacy] per 10 Workers with > 0 Dose during the Quarter)

This indicator has been stable since October 1996.



PHMC Biologic Contamination Spread

(Number of Biological Transfer or Legacy Contamination Occurrences per Month)

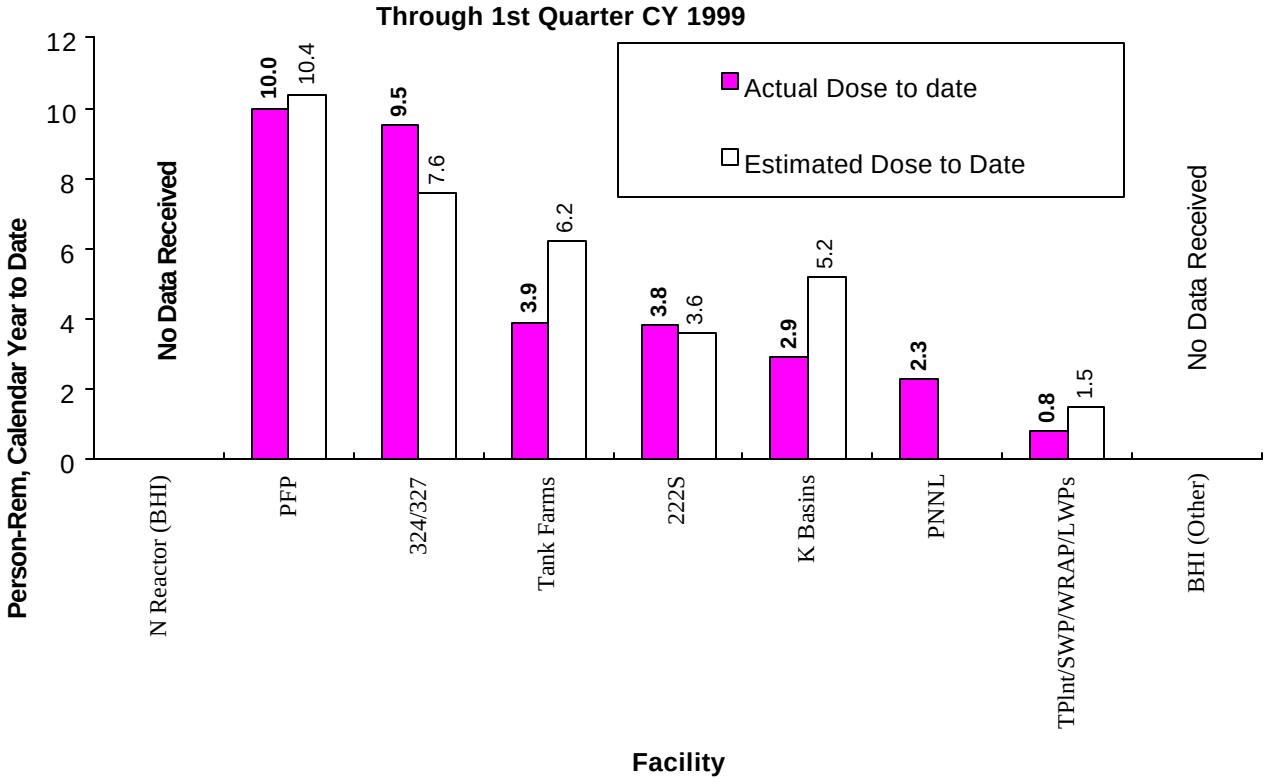
This indicator increased in 1998 as a result of spreads of contamination by biological vectors .

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

Protect Worker Safety & Health (Continued)

ALL HANFORD PROJECTS

Dose by Facility



The Radiological Dose by Facility graph reflects planned (estimated) versus actual dose by Hanford Facility. This graph has been restarted for Calendar Year 1999 cumulative data. No data was received for the BHI facilities.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

PHMC FACILITY EVALUATION BOARD (FEB) RESULTS

This section documents both historical and current facility performances as evaluated by the Facility Evaluation Board (FEB). The FEB was established to perform all FDH independent oversight utilizing established Performance Objectives and Criteria. The FEB provides facility and senior management with accurate, timely, and consistent information to measure a facility's effectiveness in completing its mission while assuring adherence to applicable conduct-of-operations, environmental, safety, health, and quality assurance and other appropriate requirements. Information is obtained through performance-based independent observation and evaluation of facilities, direct support activities, and comprehensive reviews of facility self-assessment processes.

Results depicted in the following table reflect evaluations over the past three years at each facility. Consistent improvement has been observed in seven of ten functional areas over the last three calendar years. Two areas (Environmental Programs and Operations) are slightly higher in 1998 as compared with 1997 and 1996. The overall trend for these 26 assessments shows consistent improvement.

PROTECT WORKER SAFETY AND HEALTH (CONTINUED)

PHMC Facilty Evaluation Board Results

Date	Facility	RADCON	ENV	EMERG	PREP	OPS	QA	TRNG	FOA	ENG	MAINT	OS&H	Overall
Mar-96	FFTF	2	2	3	2	3	4	3	3	3	2		2
May-96	300 LEF	4	4	4	3	4	4	4	4	4	4		4
Jul-96	West TF	4	4	3	3	4	3	3	3	3	4		4
Oct-96	Utilities	**NA**	2	4	3	3	3	4	3	4	4		4
Nov-96	K-Basins	2	3	3	3	4	3	2	3	3	3		3
Dec-96	SWP/T-Plant	3	3	4	3	4	4	4	3	4	3		4
1996	AVERAGE	3.0	3.0	3.5	2.8	3.7	3.5	3.3	3.2	3.5	3.3		3.5
Jan-97	B Plant/WESF	4	2	2	3	4	4	3	3	3	2		3
Mar-97	East TF/CP	4	3	3	3	4	2	3	3	3	2		3
May-97	300 LEF	4	2	4	2	3	4	2	3	2	2		3
Jun-97	200 LWPF	4	4	4	4	4	3	4	3	3	3		4
Aug-97	PFP	5	3	5	3	4	4	4	3	3	4		4
Sep-97	222S/WSCF	4	3	4	3	3	5	4	3	3	3		3
Nov-97	SST	3	2	3	3	3	2	3	3	3	2		3
Dec-97	324/327	3	4	4	3	5	4	3	4	3	3		4
1997	AVERAGE	3.9	2.9	3.6	3.0	3.8	3.5	3.3	3.1	2.9	2.6		3.4
Jan-98	SWP	3	3	3	3	3	4	3	3	3	2		3
Mar-98	DST/CP	4	3	3	4	3	2	3	3	3	2		3
Apr-98	WESF	4	3	3	3	3	3	3	3	3	3		3
May-98	DynCorp	5	3	4	4	4	4	4	3	3	4		4
May-98	200 LWPF	3	2	3	3	2	3	2	2	2	2		3
May-98	300 LEF	2	2	3	2	2	3	2	2	2	**1**		2
Jun-98	SNF	3	4	3	3	4	3	3	4	4	4		4
Aug-98	FFTF	2	2	2	2	2	2	2	2	2	2		2
Sep-98	Generator Svcs	3	4	**NA**	**NA**	5	4	3	**NA**	**NA**	3		4
Nov-98	222-S/WSCF	4	5	4	4	3	4	4	3	3	2		4
Dec-98	300 SP	3	3	3	3	3	2	2	3	3	2		3
1998	AVERAGE	3.3	3.1	3.1	3.1	3.1	3.0	2.8	2.8	2.8	2.5		3.2
Jan-99	SST	4	2	3	3	3	3	3	2	2	2		3
Mar-99	DynCorp	4	*	**NA**	*	**NA**	**NA**	*	**NA**	*	*		**NA**

Scoring Criteria:
1 - Excellent
2 - Meets Expectations
3 - Meets Minimum Requirements
4 - Below Expectations
5 - Significantly Below Expectations

Columns are arranged in order of 1998 Calendar Year Performance.

*Limited assessment performed and direct comparisons cannot be made to other assessments performed at DynCorp or other Hanford Facilities.